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Remarks

This application has been reviewed in light of the Office Action of November 15, 2006. Claims 1-26 are pending, and all claims are rejected. In this paper, claims 1, 3, 17, 20, and 23 are amended; claims 2 and 26 are cancelled, without prejudice; new claims 27-29 are added; and the following remarks are submitted. Reconsideration of this application is requested.

Ground 1. Claims 1-3, 5-7, 11, 13, 15, and 18 are rejected under 35 USC 102 as anticipated by Baum U.S. Patent 3,918,956. Applicant traverses this ground of rejection.

The following principle of law applies to sec. 102 rejections. MPEP 2131 provides: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim. The elements must be arranged as required by the claim..." [citations omitted] This is in accord with the decisions of the courts. Anticipation under section 102 requires 'the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.' Carella v. Starlight Archery, 231 USPQ 644, 646 (Fed. Cir., 1986), quoting Panduit Corporation v. Dennison Manufacturing Corp., 227 USPQ 337. 350 (Fed. Cir., 1985).

Thus, identifying a single element of the claim, which is not disclosed in the reference is sufficient to overcome a Sec. 102 rejection.

Amended claim 1 recites in part:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel"

Baum has no such disclosure of superalloys or martensitic steel.

Applicant has written the two rejections based on Nagata taken alone as two separate grounds, because the two rejections involve different legal issues.

Ground 2. Claims 1-3, 5-7, 11, and 13 are rejected under 35 USC 102 as anticipated by Nagata U.S. Publication 2002/0005089. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel"

Nagata has no such disclosure of superalloys or martensitic steel.

Ground 3. Claims 1-3, 5-7, 11, and 13 are rejected under 35 USC 103 as obvious over Nagata U.S. Publication 2002/0005089. Applicant traverses this ground of rejection.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

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Amended claim 1 recites in part:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel"

Nagata has no such teaching of superalloys or martensitic steel.

Ground 4. Claims 1 and 9 are rejected under 35 USC 103 as unpatentable over ASM Metals Handbook Volume 7. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel"

ASM Metals Handbook has no such teaching.

Claim 1 further recites in part:

"furnishing a mixture of at least two nonmetallic precursor compounds together comprising the constituents of the metallic article, wherein the constituents comprise the metallic base selected from the group consisting of nickel, cobalt, iron, iron-nickel, and iron-nickel-cobalt, and mixtures thereof, and at least one alloying element;"

ASM Metals Handbook has no such teaching. ASM Metals Handbook teaches the production of pure nickel, not an alloy.

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Ground 5. Claims 1-3, 5-7, and 11 are rejected under 35 USC 103 as obvious over Kundrat U.S. Patent 5,567,224. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel"

Kundrat has no such teaching.

Claim 1 further recites in part:

"chemically reducing the mixture of nonmetallic precursor compounds to produce an initial metallic particle, without melting the initial metallic particle;"

Applicant agrees with the explanation of the rejection (Office Action, page 6, lines 4-6) that Kundrat has no such teaching. The explanation of the rejection argues that an absence of melting would be expected for pure nickel and pure iron. However, the amended claims recite alloys, not pure metals. Alloys typically have melting points below those of the pure metals. Kundrat has no teaching of an absence of melting for alloys, and specifically the alloys recited elsewhere in claim 1.

Claim 1 further recites in part:

"furnishing a mixture of at least two nonmetallic precursor compounds together comprising the constituents of the metallic article, wherein the constituents comprise the metallic base selected from the group consisting of nickel, cobalt, iron, iron-nickel, and iron-nickel-cobalt, and mixtures thereof, and at least one alloying element;"

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Kundrat has no such teaching. Kundrat teaches the production of pure nickel, not an alloy.

Ground 6. Claims 10, 15, 16, 18-20, and 24-26 are rejected under 35 USC 103 over Nagata or Kundrat in view of Peras U.S. Patent 3,234,608. Applicant traverses this ground of rejection.

MPEP 2142, under ESTABLISHING A PRIMA FACIE CASE OF OBVIOUSNESS, provides: "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. [citations omitted]. See MPEP para 2143-2143.03 for decisions pertinent to each of these criteria."

First requirement--there must be an objective basis for combining the teachings of the references

The first of the requirements of MPEP 2142 is that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings." The present rejection is a sec. 103 combination rejection. To reach a proper teaching of an article or process through a combination of references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization in light of the disclosure of the specification being examined. MPEP 2142, 2143 and 2143.01. See also, for example, In re Fine, 5 USPQ2d 1596, 1598 (at headnote 1) (Fed. Cir. 1988), In re Laskowski, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989), W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 311-313 (Fed. Cir., 1983), and Ex parte

Levengood, 28 USPQ2d 1300 (Board of Appeals and Interferences, 1993); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351 (Board of Appeals 1984). As stated in In re Fine at 5 USPQ2d 1598:

"The PTO has the burden under section 103 to establish a prima facie case of obviousness. [citation omitted] It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

And, at 5 USPQ2d 1600:

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Following this authority, the MPEP states that the examiner must provide such an objective basis for combining the teachings of the applied prior art. In constructing such rejections, MPEP 2143.01 provides specific instructions as to what must be shown in order to extract specific teachings from the individual references:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

* * * * *

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)."

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"A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd.Pat.App. & Inter. 1993)."

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure.

In this case, there is no objective basis for combining the teachings of the different references. The explanation of the rejection argues that the basis is to "remove contaminates and producing marketable billets." Nagata has no teaching of contaminates that must be removed, and therefore a person of ordinary skill would have no reason to look to a secondary process that removes contaminates. Nor does Nagata teach that its process cannot produce marketable billets, and therefore there is no reason for a person of ordinary skill to look to a secondary process that is argued to produce marketable billets. Similarly, Kundrat has no teaching of contaminates that must be removed, and therefore a person of ordinary skill would have no reason to look to a secondary process that removes contaminates. Nor does Kundrat teach that its process cannot produce marketable billets, and therefore there is no reason for a person of ordinary skill to look to a secondary process that is argued to produce marketable billets.

If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references, and for adopting only the helpful teachings of each reference and disregarding the unhelpful

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teachings of the reference. Thus, as it stands now, the invention as a whole is not prima facie obvious over the combined teachings of the prior art.

Second requirement--there must be
an expectation of success

The second of the requirements of MPEP 2142 is an expectation of success. This requirement has not been addressed in the explanation of the rejection, and in any event more than Examiner's argument is required here.

As stated in MPEP 2142, "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure [citations omitted]."

Third requirement the prior art
must teach the claim limitations

The third of the requirements of MPEP 2142 is that "the prior art reference (or references when combined) must teach or suggest all the claim limitations." In this regard, the following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the applied prior art references clearly do not arguably teach some limitations of the claims.

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As to claims 10, 15, 16, and 18-20, Applicant incorporates the prior discussion, and particularly the discussion of the Ground 2, 3, and 5 rejections. Neither Nagata nor Kundrat teaches the limitations of claim 1 for the reasons stated, which limitations are incorporated into the dependent claims.

Claim 24 recites in part:

"melting and solidifying the initial metallic particle to produce a cast ingot; and
converting the cast ingot into a billet."

None of the three references teaches melting and solidifying metallic particles to make cast ingot, and then converting the cast ingot into a billet. This limitation means that a cast ingot must first be produced, and then the cast ingot is "converted" into a billet, see para. [0043]. Peras teaches to the contrary, as its molten material is cast directly into billet form, according to Peras (col. 2, lines 18-35).

Ground 7. Claims 1-4, 14, 17, 20, 21, and 23 are rejected under 35 USC 103 as being unpatentable over Ellis U.S. Patent 3,886,637 in view of ASM Handbook Vol. 7 and DeWaal U.S. Patent 4,606,761 or Altenhoner U.S. Patent 4,040,816. The rejection as stated is ambiguous. If the rejection is maintained, Applicant asks that the rejection be clarified. Does the rejection mean:

Ellis in view of ASM Handbook, and (further in view of) DeWaal or Altenhoner (in the alternative)?

Ellis in view of (a) ASM Handbook and DeWaal (taken together), or (b) Altenhoner (i.e., a combination of only Ellis and Altenhoner)? or

Ellis in view of (a) ASM Handbook and (b) DeWaal or Altenhoner?

The explanation of the rejection, including the second full paragraph on page 9 of the Office Action suggests that the rejection may be based on either one of at least two of these different interpretations. Because the secondary references all teach different processes

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that are incompatible with each other, it is necessary to know how the references are to be grouped together to fully respond.

Nevertheless, Applicant traverses the rejection because, in any event, none of the references teach the limitation of claim 1:

"the step of melting and solidifying produces an alloy that is a nickel-base superalloy, a cobalt-base superalloy, an iron-base superalloy, an iron-nickel-base superalloy, an iron-nickel-cobalt-base superalloy, or a martensitic steel."

Ellis mentions martensite, but there is no teaching that the other references, however they are arranged together, can produce a composition from nonmetallic precursor compounds that may be processed to be a martensitic steel. The explanation of the rejection references teachings of making sponge iron, but there is no reference to a mixture of precursor compounds as recited in the claims. None of the secondary references teaches such an alloy composition produced from a mixture of nonmetallic precursor compounds without melting, as recited in claim 1.

Ground 8. Claims 1-3, 6, and 20-23 are rejected under 35 USC 103 over Tellkamp in view of Bienvenu U.S. patent 4,820,339 or the ASM Handbook. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"melting and solidifying the initial metallic particle to produce a cast ingot"

Tellkamp teaches that its material is sprayed onto a surface. It is not melted and solidified to produce a cast ingot. Tellkamp thus teaches away from the present approach

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of casting and solidifying to produce a cast ingot. Neither of the secondary references cures this absence of teaching.

The dependent claims incorporate this limitation, and therefore are also patentable over this combination of references.

Ground 9. Claims 8 and 10 are rejected under 35 USC 103 as unpatentable over Tellkamp in view of Bienvenu U.S. Patent 4,820,339. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"melting and solidifying the initial metallic particle to produce a cast ingot"

Tellkamp teaches that its material is sprayed onto a surface. It is not melted and solidified to produce a cast ingot. Tellkamp thus teaches away from the present approach of casting and solidifying to produce a cast ingot. The secondary reference does not cure this absence of teaching.

The dependent claims 8 and 10 incorporate this limitation, and therefore are also patentable over this combination of references.

Ground 10. Claims 9 and 12 are rejected under 35 USC 103 over Tellkamp in view of ASM Handbook. Applicant traverses this ground of rejection.

Amended claim 1 recites in part:

"melting and solidifying the initial metallic particle to produce a cast ingot"

Tellkamp teaches that its material is sprayed onto a surface to produce a coating on the surface. It is not melted and solidified to produce a cast ingot. Tellkamp thus teaches

away from the presently recited approach of casting and solidifying to produce a cast ingot. The secondary reference does not cure this absence of teaching.

The dependent claims 9 and 12 incorporate this limitation, and therefore are also patentable over this combination of references.

Applicant asks that the Examiner reconsider and withdraw these rejections.

CONCLUSION

For at least the reasons set forth above, Applicant respectfully requests reconsideration of the Application and withdrawal of all outstanding rejections. Applicant respectfully submits that the claims are not anticipated by, nor rendered obvious in view of; the cited art either alone or in combination and thus, are in condition for allowance. Thus, Applicant requests allowance of all pending claims in a timely manner.

This Response has been filed within three (3) months of the mailing date of the Office Action and it is believed that the only fee due with the filing of this paper is \$50 for an additional dependent claim. The Commissioner is hereby authorized to deduct these and any other fees determined by the Patent Office to be due from the undersigned's Deposit Account No. 50-1059.

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